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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,753	12/01/2000	Isao Kawahara	NAKI-BN21	8014

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EXAMINER

LEWIS, DAVID LEE

ART UNIT

PAPER NUMBER

2673

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8

Please find below and/or attached an Office communication concerning this application or proceeding.

10

Office Action Summary

Application No.

09/701,753

Applicant(s)

KAWAHARA, ISAO

Examiner

David L Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 2,4 and 46-55 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. **Claims 2, 4, 47-50, 52-55 rejected under 35 U.S.C. 102(e) as being anticipated by Hirakawa et al. (6097358).**

2. **As in claim 2, Hirakawa et al. teaches** of an image display apparatus, in which one TV field period is divided into a plurality of sub-fields that are each given a different luminance weight and are arranged in ascending or descending order of luminance weight, **column 5 lines 50-60, figure 3**, when S denotes a sum of luminance weights of the plurality of sub-fields and R is within a range from 0 to S, **figure 3, wherein S equals 251 and R is 0, 1, 2, 3, ...100, 200, or 251**, a gray level corresponding to R is expressed by selecting sub-fields whose luminance weights, when added together, are closest to R, **figure 3, column 7 lines 54-67, wherein S equals 251 and R is 0, 1, 2, 3, ...100, 200, or 251**, characterized in that when the plurality of sub-fields are arranged in ascending order of luminance weight with a luminance weight of an "i"th sub-field

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being denoted by W_i , "n" exists such that $W_1 + W_1 + W_2 + \dots + W_i \dots + W_n < W_{n+1}$, **figure 3, column 8 lines 1-20, lines 60-67**. Wherein as broadly interpreted wherein i is any number less than n, n having no upper or lower bound, Hirakawa et al. teaches of weights failing with a range. Further, wherein respective weights of luminance are integer multiples of the minimum weight 1 and equal to one plus the total sum of the weights smaller than themselves.

3. **As in claims 4 and 55, Hirakawa et al. teaches** of an image display apparatus and method, in which one TV field period is divided into a plurality of sub-fields that are each given a luminance weight and are arranged in order of time, **column 5 lines 50-60, figure 3**, and a gray scale image for the TV field period is displayed by choosing one of a plurality of coding patterns which are each made up of a combination of sub-fields having predetermined luminance weights in accordance with a maximum gray level of an input image signal and illuminating each pixel during desired sub-fields using the chosen coding pattern, **column 7 lines 55-67, figure 3**, where maximum display luminance is controlled according to a characteristic of the input image signal, characterized in that when a ratio of a sum of luminance weights of all sub-fields in a first coding pattern to a sum of luminance weights of all sub-fields in a second coding pattern is denoted by K, **column 8 lines 1-22, figure 3**, where the first and second coding patterns are included in the plurality of coding patterns and the sub-fields in the first coding pattern are in a one-to-one correspondence with the sub-fields in the second coding pattern in order of luminance weight, **column 8 lines 1-22, figure 3**, the sub-

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fields in the first coding pattern include; a) a sub-field having a luminance weight whose ratio to a luminance weight of a corresponding sub-field in the second coding pattern is less than or equal to a value K, **column 8 lines 1-22, figure 3**, and b) a sub-field having a luminance weight whose ratio to a luminance weight of a corresponding sub-fields in the second coding pattern is greater than the value K, **column 8 lines 23-40, figure 3**. Wherein the weights for the three sub-field groups are 1, 6, and 36. Wherein the ratio first to second is 5:30 or 1X5:6X5 as shown in column 8 lines 1-22 and figure 3, and therefore $K = 1/6$ or 6. Further if K is 6 then the sub-fields in the first coding pattern with a weight of 1 is less than 6. Further wherein sub-fields in the first sub-field group SFG1 are not required to be equally weighted, and therefore can take on values greater than K, as long as the respective weights of luminance are integer multiples of the minimum weight "1" and equal to one plus the total sum of the weights smaller than themselves.

4. **As in claims 47-49, Hirakawa et al. teaches of** said monotonously increase in ascending order of luminance weight, figure 3, said ratios increase in arithmetic progression in ascending order of luminance weight, figure 3, and wherein the ratios increase in geometric progression in ascending order of luminance weight, figure 3. **As in claim 50, Hirakawa et al. teaches of** wherein the sub-field with the ratio no greater than K includes a sub-field having a fixed smallest luminance weight, figure 3, wherein said fixed smallest luminance weight is 1 in the first sub-field and 6 in the second sub-field. **As in claim 52, Hirakawa et al. teaches of** wherein when S denotes a sum of luminance weights of the plurality of sub-fields and R is within a range from 0 to S, a

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gray level corresponding to R is expressed by selecting sub-fields whose luminance weights, when added together, are closest to R, **figure 3, column 7 lines 54-67, wherein S equals 251 and R is 0, 1, 2, 3, ...100, 200, or 251. As in claim 53, Hirakawa et al. teaches of** wherein the selection of the sub-fields is controlled in accordance with one out of: an amount of movement from an image of a past TV field period to the image of the TV field period, **column 8 lines 23-44;** and an approximate value of the amount of movement, **column 8 lines 23-44.** Wherein the sub-field is adjusted for optimization. **As in claim 54, Hirakawa et al. teaches of** wherein in an image area where the amount of movement or the approximate value of the amount of movement is larger than a predetermined level, such combinations of sub-fields are chosen that monotonously increase in time with increasing gray levels of the input image signal, column 8 lines 23-44.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 46 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirakawa et al. (6097358).**

6. **As in claims 46 and 51, Hirakawa et al. is silent as to** said at least two sets of three luminance weights selected in ascending order of luminance weight each meet the condition that the three luminance weights have a proportion selected from a plurality of proportions that are "1:2:3", "1:2:4", "1:2:5", "1:2:6", "1:3:7", "1:4:9", "2:6:12", and "2:6:16". However Hirakawa et al. does teaches that no all the sub-fields belonging thereto are required to be weighted equally but luminance fields may be suitably be selected. Therefore given the given the respective weights of luminance can be integer multiples of the minimum weight "1" and equal to one plus the total sum of the weights smaller than themselves, said feature allows for one of "1:2:3", "1:2:4", "1:2:5", "1:2:6", "1:3:7", "1:4:9", "2:6:12", and "2:6:16", as the proportion, wherein said modification producing said ratio's are function of adjusting for optimization as suggested by Hirakawa et al., column 8 lines 23-44. .

Response to Arguments

7. Applicant's arguments filed 6/16/2003 have been fully considered but they are not persuasive. Claims rejected and not discussed in the previous office action are rejected in view of Hirakawa as found above. Hirakawa et al. teaches of said plurality of sub-fields each having a different luminance weight and arranged in ascending order, as shown in figure 3. Applicant argues Hirakawa teaches of a plurality of sub-fields having the same luminance weight, however Hirakawa states at column 8 lines 23-30, that not all the sub-fields belonging thereto are required to be weighted equally.

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Hirakawa teaches the sub-field can be adjusted of optimization, column 8 lines 23-43. Further while Hirakawa does not expressly teach of said ratio value K it is inherent to the given sub-groups in relation to the respective sub-fields, as shown in figure 3 and discussed in column 8. The rejection in view of Kawahara et al. has been withdrawn in view of the applicant's arguments, however the rejection over Hirakawa et al. stands.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L Lewis whose telephone number is 703 306-3026. The examiner can normally be reached on M, T, TH, F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703 305-4938.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231


or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

dll
August 15, 2003


BIPIN SHALWALA
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